

What is claimed is:

1. A styrenic thermoplastic resin composite comprising:

(A) about 50 to 95 parts by weight of a styrene-containing copolymer prepared by polymerization of:

(a1) about 50 to 95 % by weight of styrene, α -methylstyrene, halogen- or alkyl-substituted styrene, or a mixture thereof and

(a2) about 5 to 50 % by weight of acrylonitrile, methacrylonitrile, C₁₋₈ methacrylic acid alkyl ester, C₁₋₈ acrylic acid alkyl ester, maleic acid anhydride, C₁₋₄ alkyl or phenyl N-substituted maleimide or a mixture thereof;

(B) about 5 to 50 parts by weight of glass fibers; and

(C) about 0.05 to 1.5 parts by weight of an aminosilane coupling agent.

2. The composite according to claim 1, wherein said aminosilane coupling agent is selected from the group consisting of γ -amino propyltriethoxy silane, γ -amino propyltrimethoxy silane, γ -aminopropyl-tris(2-methoxy-ethoxy)silane, N-(β -amino ethyl) γ -amino propyltrimethoxy silane, N-(β -amino ethyl) γ -amino propyltriethoxy silane, and β (3,4-epoxyethyl) γ -amino propyltrimethoxy silane.

3. The composite according to claim 1, wherein the glass fibers are used in the amount of 10 to 40 parts by weight.

4. The composite according to claim 1, wherein said glass fibers are treated with a coupling agent represented by the following formula:



where Y is an organic functional group that can react with a matrix resin, which is selected from the group consisting of vinyl, epoxy, mercaptan, amine and acryl, R is a C₁₋₅ alkyl group and X is an ethoxy group or a halogen atom.

5. The composite according to claim 1, wherein said glass fibers are treated with γ -methacryloxy propyltriethoxy silane.

6. The composite according to claim 1, wherein said component (a1) is about 50 to 70 % by weight and component (a2) is about 30 to 50 % by weight of the styrene containing copolymer.

7. The composite according to claim 1, further comprising up to about 35 parts by weight of a modified aromatic vinyl graft copolymer.

8. The composite according to claim 7, wherein said modified aromatic vinyl graft copolymer is prepared by grafting about 22 to 99 % by weight of an aromatic vinyl monomer mixture onto about 1 to 80 % by weight of a rubber polymer.

9. The composite according to claim 8, wherein the aromatic vinyl monomer mixture comprises (D1) styrene, para-t-butylstyrene, alpha-methylstyrene, beta-methylstyrene, vinylxylene, monochlorostyrene, dichlorostyrene, dibromostyrene, chlorostyrene, ethylstyrene, vinylnaphthalene, divinylbenzene, or a mixture thereof, and (D2) acrylonitrile, methacrylonitrile, acrylic acid ester, maleic acid anhydride or a mixture thereof.

10. An molded article prepared using the styrenic thermoplastic resin composite according to claim 1.

11. A styrenic thermoplastic resin composite comprising:

(A) about 50 to 95 parts by weight of a styrene-containing copolymer prepared by polymerization of:

(a1) about 50 to 95 % by weight of styrene, α -methylstyrene, halogen- or alkyl-substituted styrene, or a mixture thereof and

(a2) about 5 to 50 % by weight of acrylonitrile, methacrylonitrile, C₁₋₈ methacrylic acid alkyl ester, C₁₋₈ acrylic acid alkyl ester, maleic acid anhydride, C₁₋₄ alkyl or phenyl N-substituted maleimide or a mixture thereof;

(B) about 5 to 50 parts by weight of glass fibers; and

(C) about 0.05 to 1.5 parts by weight of an aminosilane coupling agent

wherein the styrenic thermoplastic resin composite is prepared by:

admixing a styrene-containing copolymer (A) as a matrix resin with an aminosilane coupling agent in a mixer;
extruding the admixture of the styrene-containing copolymer and the aminosilane coupling agent (C) in an extruder; and
5 feeding glass fibers (B) in the middle of the extruder into the melt of the admixture of (A) and (C).

12. The composite according to claim 11, wherein said aminosilane coupling agent is selected from the group consisting of γ -amino propyltriethoxy silane, γ -amino propyltrimethoxy silane, γ -aminopropyl-tris(2-methoxy-ethoxy)silane, N-(β -amino ethyl) γ -amino propyltrimethoxy silane, N-(β -amino ethyl) γ -amino propyltriethoxy silane, and β (3,4-epoxyethyl) γ -amino propyltrimethoxy silane.

13. A styrenic thermoplastic resin composite comprising:

(A) about 50 to 95 parts by weight of a styrene-containing copolymer prepared by polymerization of:

- (a1) about 50 to 95 % by weight of styrene, α -methylstyrene, halogen- or alkyl-substituted styrene, or a mixture thereof and
- (a2) about 5 to 50 % by weight of acrylonitrile, methacrylonitrile, C₁₋₈ methacrylic acid alkyl ester, C₁₋₈ acrylic acid alkyl ester, maleic acid anhydride, C₁₋₄ alkyl or phenyl N-substituted maleimide or a mixture thereof;

(B) about 5 to 50 parts by weight of glass fibers; and

(C) about 0.01 to 5.0 parts by weight of an aminosilane coupling agent.

14. The composite according to claim 13, wherein said aminosilane coupling agent is selected from the group consisting of γ -amino propyltriethoxy silane, γ -amino propyltrimethoxy silane, γ -aminopropyl-tris(2-methoxy-ethoxy)silane, N-(β -amino ethyl) γ -amino propyltrimethoxy silane, N-(β -amino ethyl) γ -amino propyltriethoxy silane, and β (3,4-epoxyethyl) γ -amino propyltrimethoxy silane.

15. The composite according to claim 13, wherein the glass fibers are used in an amount of about 10 to 40 parts by weight.

16. The composite according to claim 1, wherein said glass fibers are treated with a coupling agent.

17. A method of preparing a styrenic thermoplastic resin composite comprising:

admixing a styrene-containing copolymer as a matrix resin with an aminosilane coupling agent in a mixer;

extruding the admixture of the styrene-containing copolymer and the aminosilane coupling agent in an extruder; and

feeding glass fibers in the middle of the extruder into the melt of the admixture.

18. The method according to claim 17 wherein about 50 to 95 parts by weight of a styrene-containing copolymer is used wherein the styrene-containing copolymer is prepared by polymerization of (a1) about 50 to 95 % by weight of styrene, α -methylstyrene, halogen- or alkyl-substituted styrene, or a mixture thereof and (a2) about 5 to 50 % by weight of acrylonitrile, methacrylonitrile, C_{1-8} methacrylic acid alkyl ester, C_{1-8} acrylic acid alkyl ester, maleic acid anhydride, C_{1-4} alkyl or phenyl N-substituted maleimide or a mixture thereof; and about 5 to 50 parts by weight of glass fibers and about 0.01 to 5.0 parts by weight of an aminosilane coupling agent are used.